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DEMARK		Application Number	10/763,498	o i dispir	ATT OF TORSE CONTROL HOLLINGS
TRANSMITT	TAL	Filing Date	01/22/04		
FORM		First Named Inventor	Andrew R. Marks		-
(to be used for all correspondence	ce after initial filing)	Art Unit	1614		
	•	Examiner Name	to be assigned		
Total Number of Pages in This Sut	ubmission 24	Attorney Docket Number	5199-139	-	
	ENCL	OSURES (Check all that	apply)		
Fee Transmittal Form Fee Attached Amendment/Reply After Final Affidavits/declarat Extension of Time Reque Express Abandonment Re Information Disclosure State Certified Copy of Priority Document(s) Response to Missing Part Incomplete Application Response to Miss under 37 CFR 1.5	ation(s) est Request statement rts/ sing Parts	icensing-related Papers etition etition to Convert to a rrovisional Application ower of Attorney, Revocation change of Correspondence Addre erminal Disclaimer dequest for Refund ED, Number of CD(s)	Ap of Ap of Ap (AF (AF Pro Sta	Technolo peal Cor Appeals peal Cor Appeal Not Appeal Not Appeal Not Apprietary Atus Lett	osure(s) (please low):
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Firm Todd Holmbo	, Reg. No. 42,665	F APPLICANT, ATTORNE	I, UK AGEN		
or Individual name	, INGY, INO. 42,000				
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Date 9/24/04	·- (:				
	CERTIFIC	ATE OF TRANSMISSION	/MAILING		
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Signature	Pingli	ao		Date	9/24/04

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Andrew R. Marks, et al.,

Docket No.:

5199-139

Serial No.:

10/763,498

Examiner:

to be assigned

Filed:

January 22, 2004

Group Art Unit: 1614

Title:

NOVEL ANTI-ARRYTHMIC AND HEART FAILURE DRUGS THAT TARGET THE LEAK IN THE RYANODINE RECEPTOR

(RyR2)

September 24, 2004

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

<u>INFORMATION DISCLOSURE STATEMENT</u> <u>UNDER 37 CFR §1.97(b)</u>

Sir:

In accordance with the duty of disclosure under 37 CFR §1.56, applicant hereby notifies the U. S. Patent and Trademark Office of the following documents, which are listed on the attached PTO/SB/08A and PTO/SB/08B forms. The examiner may deem these documents to be relevant to patentability of the claims of the above-identified application. A Copy of the document is enclosed for the examiner's convenience.

The submission of the listed documents is not intended as an admission that any of the documents constitute prior art against the claims of the present application. Applicants do not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

Applicants respectfully request that the listed documents be considered by the examiner and be made of record in the present application and that initialed copies of forms PTO/SB/08A and PTO/SB/08B be returned in accordance with MPEP §609.

It is understood that no fee is necessary for submission of this Information Disclosure Statement, as it is being filed before the later of three months from the filing date or the mailing of the first Office Action on the merits. The Commissioner is hereby authorized to charge payment of any fees associated with this application or credit any overpayment to Deposit Account No. 02-4270.

Respectfully submitted,

Todd Holmbo

Reg. No. 42,665

Attorney for Applicants

BROWN RAYSMAN MILLSTEIN

FELDER & STEINER LLP

163 Madison Avenue

P.O. Box 1989

Morristown, New Jersey 07962-1989

(973) 775-8930

PTO/SB/08A (08-03) Approved for use through 07/31/2006. OMB 0651-0031

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Substitute for form 1449/PTO

Sheet 1

THE TROUBLAS

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

of 2

Application Number 10/763,498 Filing Date 01/22/04 First Named Inventor Andrew R. Marks Art Unit 1614 to be assigned Examiner Name Attorney Docket Number 5199-139

Complete if Known

			U. S. PATENT	DOCUMENTS	
Examiner Initials*	Cite No.1	Document Number Number-Kind Code ² (# known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 6489125	12-03-2002	Marks, et al.	
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		^{US-} 5910494	06-08-1999	Brieaddy	
		us- 5859240	01-12-1999	Brieaddy	1
		^{US-} 5817652	10-06-1998	Brieaddy, et al.	
		^{US-} 5723458	03-03-1998	Brieaddy, et al.	
		^{US-} 5580866	12-03-1996	Housley, et al.	
		^{US-} 5416066	05-16-1995	Kaneko, et al.	
		US-			
		^{US-} 20030134331	07-17-2003	Marks, et al.	
		US-			
		^{US-} 10/608,723	03-11-2004	Marks	
		^{US-} 10/288,606	07-17-2003	Marks, et al.	
		^{US-} 09/568,474	03-11-2004	Marks	
		US-			
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			N PATENT DOCL	IMENTS		
Examiner Initials*	Cite No.1	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages	
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)	MM-DD-YYYY		Or Relevant Figures Appear	T ⁶
		WO03034980	05-01-2003	Picariello, T.,	113 of 4665 pages	
		WO02053548	07-11-2002	Nagase T.,		
		WO02051838	07-04-2002	Weller T.,		
		WO02051232	07-04-2002	Sifferlen T.,		
		WO0100185	01-04-2001	Kilpatrick C.,		
		WO9703986	02-06-1997	Tanaka H.,		

Examiner	Date	
Signature	Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁶Kind of document to the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449/PTO	Art Unit 1614		
	Application Number	10/763,498	
INFORMATION DISCLOSURE	Filing Date	01/22/04	
	First Named Inventor	Andrew R. Marks	
STATEMENT BY APPLICANT	Art Unit	1614	
(Use as many sheets as necessary)	Examiner Name	to be assigned	

Attorney Docket Number | 5199-139

Sheet 2

			U. S. PATENT D		
Examiner Initials*	Cite No.1	Document Number Number-Kind Code ^{2 (# known)}	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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		US-			
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Examiner Initials*	Cite No.1	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages	
		Country Code ³ Number ⁴ 'Kind Code ⁵ (<i>if known</i>)			Or Relevant Figures Appear	T ⁶
		WO9212148	07-23-1992	Kaneko N.,		
		JP11199574	07-27-1999	Harada K.,		
		JP10045706	02-17-1998	Kano H.,		
		JP3093419	04-18-1991	Kabumoto K.,		

Examiner	Date	
Signature	Considered	

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PTO/SB/08B (08-03)

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ler the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number. TRADE MEDIOStitute for form 1449/PTO Complete if Known **Application Number** 10/763,498 **Filing Date** INFORMATION DISCLOSURE 01/22/04 STATEMENT BY APPLICANT **First Named Inventor** Andrew R. Marks Art Unit 1614 (Use as many sheets as necessary) **Examiner Name** to be assigned Attorney Docket Number Sheet 19 5199-139

	0:4-	NON PATENT LITERATURE DOCUMENTS	T		
Examiner Initials*	Cite No. Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-iss number(s), publisher, city and/or country where published.				
		Alvarez et al., "Late post-myocardial infarction induces a tetrodotoxin-resistant Na (+) current in rat cardiomyocytes."			
		J. Mol. Cell Cardiol 32: 1169-1179, 2000			
,		Antos et al., "Dilated cardiomyopathy and sudden death resulting from constitute activation of protein kinase A."			
		Circ. Res., 89: 997-1004, 2001			
		Barbone et al., "Comparison of right and left ventricular responses to left ventricular assist device support in patients with severe heart failure:			
		a primary role of mechanical unloading underlying reverse remodeling."			
		Circulation, 104: 670-675, 2001			
		Bennett et al., "Identification and characterization of the murine FK 506 binding protein (FKBP) 12.6 gene."			
		Mamm. Genome, 9: 1069-1071, 1998			

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Examiner		Date	
Signature		Considered	

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¹ Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

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Sheet	2	of	19	Attorney Docket Number	5199-139	

	-	NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-iss number(s), publisher, city and/or country where published.				
	:	Beuckelmann et al., "Intracellular calcium handling in isolated ventricular myocytes from patients with terminal heart failure."			
		Circ., 85: 1046-1055, 1992			
		Brillantes et al., "Stabilization of calcium release channel (ryanodine receptor) function by FK506-binding protein associated with the calcium			
		release channel (ryanodine receptor) function by FK506-binding protein."			
		Cell, 77: 513-523, 1994			
		Bristow et al., "Decreased catecholamine sensitivity and beta-adrenergic-receptor density in failing human hearts."			
		N. Engl. J. Med., 307: 205-211, 1982			
		Carmeron et al., "FKBP12 binds the inositol 1,4,5-trisphosphate receptor at leucine-proline (1400-1401) and anchors calcineurin to this FK506-			
		like domain."			
_		J. Biol. Chem., 272: 27582-27588, 1997			

Examiner	Date	
Signature	Considered	

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1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

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Sheet	3	of	19	Attorney Docket Number	5199-139	

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		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Catsoulacos, "Synthesis of substituted dihydrobenzothiazepines and related compounds."	
-		J. Heterocyclic chemistry 7(2): 409-411, 1970 (N/A)	
		Chen et al., "Mechanism of TGFbeta receptor inhibition by FKBP12."	
		EMBO J., 16: 3866-3876, 1997	
		Chidsey et al., "Augmentation of plasma norepinephrine response to exercise in patients with congestive heart failure."	
		N. Engl. J. Med., 267:650, 1962	
		Chugh et al., "Epidemiology and natural history of atrial fibrillation: clinical implications."	
		J. Am. Coll. Cardiol., 37: 371-378, 2001	
		Daoud et al., "Effect of verapamil and procainamide on atrial fibrillation-induced electrical remodeling in humans."	
		Circulation, 96: 1542-1550, 1997	

Examiner	Date	
Signature	Considered	

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Cabonialo Ioi Ioini	1440,1110		Application Number	10/763,498	
INFORMA	ATION DIS	CLOSURE	Filing Date	01/22/04	
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Sheet 4	of	19	Attorney Docket Number	5199-139	

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Eichhorn and Bristow, "Medical therapy can improve the biological properties of the chronically failing heart. A new era in the treatment of	
		heart failure."	
		Circulation, 94: 2285-2296, 1996	
		Elvan et al., "Pacing-induced chronic atrial fibrillation impairs sinus node function in dogs: electrophysiological remodeling."	
		Circulation, 94: 2953-2960, 1996	
		Fabiato, A., "Calcium-induced release of calcium from the cardiac sarcoplasmic reticulum."	
		Am. J. Physiol., 245: C1-C14, 1983	
		Falk, R.H., "Atrial fibrillation."	
		N. Engl. J. Med., 344: 1067-1078, 2001	

Examiner	Date	
Signature	Considered	

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Substitu	ite for form 1449/PTO		-	Complete if Known		
, 5555				Application Number	10/763,498	
INF	ORMATION	DIS	CLOSURE	Filing Date	01/22/04	
STA	ATEMENT E	BY A	PPLICANT	First Named Inventor	Andrew R. Marks	
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Sheet	5	of	19	Attorney Docket Number	5199-139	

Examiner	Cite	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of	_
Initials*	No. ¹	the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Fodor, et al., "New convenient synthesis of 1,4-benzothiazepines."	
		Tetrahedron Letters. 36(5): 753-756, 1995 (N/A)	
		Fozzard, H. A., "Afterdepolarizations and triggered activity."	
		Basic Res. Cardiol., 87: 105-113, 1992	
		Gaspo et al., "Functional mechanisms underlying tachycardia-induced sustained atrial fibrillation in a chronic dog model."	
_		Circulation, 96: 4027-4035, 1997	
		Gillo et al., "Calcium influx in induced differentiation of murine erythroleukemia cells."	
		Blood, 81: 783-792, 1993	
		Goette et al., "Electrical remodeling in atrial fibrillation: time course and mechanisms."	
		Circulation, 94: 2968-2974, 1996	

Examiner	Date	
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Initials*	No.1	the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Gomez et al., "Defective excitation-contraction coupling in experimental cardiac hypertrophy and heart failure."	
		Science, 276: 800-806, 1997	
		Gwathmey et al., "Abnormal intracellular calcium handling in myocardium from patients with end-stage heart failure."	
		Circ. Res., 61: 70-76, 1987	
		Hachida et al., "Protective effect of JTV519 on prolonged myocardial preservation."	
		Transplant Proc. 31: 1094, 1999	
		Hachida et al., "Protective effect of JTV519, a new 1,4-benzothiazepine derivative, on prolonged myocardial preservation."	
		J. Card Surg. 14: 187-193, 1999	

Examiner	Date	-
Signature	Considered	

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Substitu	te for form 1449/PTO			Complete if Known		
Cabolina				Application Number	10/763,498	
INF	ORMATION	DIS	CLOSURE	Filing Date	01/22/04	
STA	TEMENT B	BY A	PPLICANT	First Named Inventor	Andrew R. Marks	
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(Use as many sheets as necessary)			ecessary)	Examiner Name	to be assigned	
Sheet	7	of	19	Attorney Docket Number	5199-139	

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Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Hain et al., "Phosphorylation modulates the function of the calcium release channel of sarcoplasmic reticulum from cardiac muscle."	
		J. Biol. Chem., 270: 2074-2081, 1995	
		Inagaki et al., "The cardioprotective effects of a new 1,4-benzothiazepine derivative, JTV 519, on ischemia / reperfusion-induced Ca2+ overload	
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-	-	protein Kinase C in rat ventricular myocardium."	
		Circulation. 101: 797-804, 2000	

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		Ito, et al., "JTV-519, a novel cardioprotective agent, improves the contractile recovery after ischemia reperfusion in coronary perfused guinea pig	
		ventricular muscles."	
•		Br. J. Pharmacol. 130 (4): 767-776, 2000	
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		Circ. Res., 78: 990-997, 1996	

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		Kawabata et al., "Effect of a novel cardioprotective agent, JTV-519, on netabolism, contraction and relaxation in the ischemia-reperfused					
		rabbit heart."					
		Jpn Circ J. 64: 772-776, 2000					
		Kawabata et al., "A novel cardioprotective agent, JTV-519, is abolished by nitric oxide synthase inhibitor on myocardial metabolism in ischemia-					
		reperfused rabbit hearts."					
		Hypertens Res. 25: 303-309, 2002 (N/A)					
		Kimura et al., "Effects of a novel cardioprotective drug, JTV-519, on membrane currents of guinea-pig ventricular myocytes."					
		Jpn J. Pharmacol. 79: 275-281, 1999					

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		Kiriyama et al., "Effects of JTV-519, a novel anti-ischaemic drug, on the delayed rectifier K+ current in guinea-pig ventricular myocytes."	
		Naunyn Schmiedebergs Arch Pharmacol. 361(6): 646-653, 2000	
		Kohno et al., "A new cardioprotective agent, JTV-519, improves defective channel gating of ryanodine receptor in heart failure."	
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		Kumagai et al., "Antiarrhythmic effects of JTV-519, a novel cardioprotective drug, on atrial fibrillation / flutter in a canine sterile	
		pericarditis model."	
		J. Cardiovasc. Electrophysiol. 14(8): 880-884, 2003	
		Laitinen et al., "Mutations of the cardiac ryanodine receptor (RyR2) gene in familial polymorphic ventricular tachycardia."	
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		NON PATENT LITERATURE DOCUMENTS	
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		Leenhardt et al., "Catecholaminergic polymorphic ventricular tachycardia in children: a 7-year follow-up of 21 patients."	
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		Marban et al., "Mechanisms of arrhythmogenic delayed and early afterdepolarizations in ferret ventricular muscle."	
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		Mark, A.R., "Cellular functions of immunophilins."	
		Physiol Rev., 76: 631-649, 1996	

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STA	TEMENT	BY A	PPLICANT	First Named Inventor	Andrew R. Marks	
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Sheet	12	of	19	Attorney Docket Number	5199-139	

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		Marks, A. R., "Cardiac intracellular calcium release channels: role in heart failure."	3.
		Circ. Res., 87: 8-11, 2000	
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		Marks et al., "Ryanodine receptors, FKBP12, and heart failure."	
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		Marks et al., "Involvement of the cardiac ryanodine receptor / calcium release channel in catecholaminergic polymorphic ventricular tachycardia."	
,		J. Cell Physiol. 190(1): 1-6, 2002	

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		Marx et al., PKA phosphorylation dissociates FKBP12.6 from the calcium release channel (ryanodine receptor): defective regulation in failing hearts.	
_		Cell, 101: 365-376, 2000	
		Marx et al., Coupled gating between individual skeletal muscle Ca2+ release channels (ryanodine receptors).	
		Science, 281: 818-821, 1998	
		Morillo et al., "Chronic rapid atrial pacing: structural, functional, and electrophysiological characteristics of a new model of sustained atrial	
		fibrillation.	
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		Br. J. Pharmacol. 131(7): 1363-1372, 2000	
		Ono et al., "Altered interaction of FKBP12.6 with ryanodine receptor as a cause of abnormal Ca2+ release in heart failure."	
		Cardiovasc. Res., 48: 323-331, 2000	
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		Circulation, 107: 2459-2466, 2003	

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		Reiken et al., "Beta-adrenergic receptor blockers restore cardiac calcium release channel (ryanodine receptor) structure and function in	
		heart failure."	
,,,,,,,		Circulation, 104: 2843-2848, 2001	
		Reiken et al., "Beta-blockers restore calcium release channel function and improve cardiac muscle performance in human heart failure."	
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		Reiken et al., "PKA phosphorylation dissociates FKBP12 from the Calcium release channel (Ryanodine Receptor) in skeletal muscle: defective	
		regulation in heart failure."	
		J. Cell Biol. 160: 919-928, 2003	
		Rensma et al., "Length of excitation wave and susceptibility to reentrant atrial arrhythmias in normal conscious dogs."	
		Circ. Res., 62: 395-410, 1988	

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Sheet	16	of	19	Attorney Docket Number	5199-139

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Semsarian et al., "The L-type calcium channel inhibitor diltiazem prevents cardiomyopathy in a mouse model."	
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		Song and Belardinelli, "ATP promotes development of afterdepolarization and triggered activity in cardiac myocytes."	
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Signature		Considered	

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		Valdivia et al., "Rapid adaptation of cardiac ryanodine receptors: modulation by Mg2+ and phosphorylation."	
		Science, 267: 1997-2000, 1995	
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		Yamamoto et al., "Abnormal Ca2+ release from cardiac sarcoplasmic reticulum in tachycardia-induced heart failure."	
		Cardiovasc. Res., 44: 146-155, 1999	
		Yano et al., "Altered stoichiometry of FKBP12.6 versus ryanodine receptor as a cause of abnormal Ca2+ leak through ryanodine receptor	
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		Circulation, 97: 2331-2337, 1998	

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